Doc Code: AP.PRE.REQ

PTO/SB/33 (07/05)
Approved for use through xx/xx/200x. OMB 0651-00xx
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): 870A.0002.U1(US)

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR

on _____

Signature _____

Typed or printed name Ann Okrentowich

Application Number	Filed
10/049,589	04/03/2002

First Named Inventor: Vihriala

Art Unit	Examiner
2616	D. J. Ryman

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- ☑ attorney or agent of record. Registration number 60,470
- ☐ attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

Signature

John A. Garrity
Typed or printed name

(203) 925-9400
Telephone number

21 June 2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _ forms are submitted.

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re U.S. Patent Application of:

APPLICANTS: Jaakko Vihriala.

SERIAL NO.: 10/049,589 FILING DATE: April 3, 2002

EXAMINER: Ryman, Daniel J ART UNIT: 2616

ATTORNEY'S DOCKET NO.: 870A.0002.U1 (US)

TITLE: A METHOD TO DECREASE SYNCHRONIZATION TIME IN HANDOVER

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pre-Appeal Request for Review

The following is a concise recitation of clear errors in the Examiner's rejections in this application. Claims 1-18 are pending. The Examiner's Office Action dated March 21, 2007, rejects claims 1-6, 9-14, and 17-18 under 35 USC 103(a) as being unpatentable over Applicant's admitted prior art in view of Dahlman (US6,526,039); and rejects claims 7-8 and 15-16 under 35 USC 103(a) as being unpatentable over Applicant's admitted prior art in view of Dahlman as applied to claims 1 and 9 and further in view of Papasakellariou (US6,275,483).

Claims 1, 9, and 17 are independent claims, and each of these independent claims recites similar subject matter. Claim 1 is chosen for the following argument as being representative.

Claim 1 recites:

> A method comprising: performing synchronization of a mobile network device to a network control device of a present radio network region, further comprising: detecting a source radio network region from which a handover of said mobile network device to said present radio network region has been performed; **determining a start propagation delay value based on said detected source radio network region of said mobile station; and searching an actual propagation delay value by using a search strategy based on said determined start propagation delay.**

The problem addressed by the invention is described in detail in the Background section of the application. Specifically, when performing a handover, **the distance between a mobile station and a new base station** is not known, and **therefore the propagation delay is not known** (page 2, line 25, to page 3, line 3). Thus, in the Background section, a conventional means to detect propagation delay using a matched filter is described. However, as indicated in the application, a matched filter requires a long search time (page 4, lines 33-34).

Dahlman discloses a method and system for facilitating timing of base stations in an asynchronous CDMA mobile communications system (abstract). In Dahlman, mobile stations measure the relative time differences (RTDs) between various pairs of BSs, and the measurements are stored by the BSs. In Dahlman, these time differences are then used in the handover (col. 6, lines 3-18). The Applicant contends that in Dahlman a known delay is used, and thus there is no "**searching an actual propagation delay value**" as disclosed in at least claim 1 of the invention.

In the Response to Arguments section of the final Office Action the Examiner states that the "search strategy" is shown in Dahlman. Namely, that Dahlman discloses that **the relative time differences (RTDs) are estimates** (col. 6, lines 3 to 18). Moreover, the Examiner cites Dahlman at column 6, lines 31 to 35 where Dahlman discloses "an improved **estimate** of the **RTD**" is determined. Furthermore, the Examiner cites Dahlman at column 7, lines 39 to 45 where **a time-search window** is mentioned. However, here Dahlman merely appears to disclose that an MS can adjust "its time-search window accordingly" dependent upon "**an RTD uncertainty estimate**" sent to it. Further, the Examiner holds the view that the passage in column 2, lines 22 to 24, mentioning a cell-search, or as mentioned in column 6, lines 60 to 64 also indicates a search strategy. However, the Applicant contends that this passage merely relates to the selection of neighbor cells.

The Applicant contends that **the Examiner clearly fails to take into account the difference between an RTD and a propagation delay**. The Applicant argues that the RTD refers to a time difference between Base Stations, whereas the propagation delay is the time delay between the

mobile station and the BSs. This distinction is also supported where Dahlman discloses:

> "The present invention solves this problem by calculating an improved RTD that accounts for the propagation delays of uplink and downlink signals. Essentially, **the improved RTD is the difference between the time at which a first BS begins transmitting its downlink signal and the time at which a second BS begins transmitting its downlink signal**," (col. 9, lines 8-14).

Clearly, the Examiner is improperly using the method according to Dahlman that is "**calculating an improved RTD**" to reject claim 1 of the invention which recites in part "**searching an actual propagation delay value by using a search strategy based on said determined start propagation delay**." The Applicant contends that Dahlman merely discloses **using a known propagation delay** in order to estimate the RTD.

Moreover, in Dahlman, it is described that the accuracy of the estimated RTDs can be greatly improved by accounting for propagation delays between the MS and the BS, which are used to estimate the RTD (col. 4, lines 51-61). **Hence, Dahlman clearly distinguishes between an RTD and a propagation delay**. In particular, according to this passage in Dahlman, the propagation delay has to be known in order to be able to estimate the RTD. This is also described in the detailed description of Dahlman in col. 8, line 60, to col. 9, line 20.

In the Office Action, the Examiner cites Dahlman col. 2, line 33, to col. 3, line 34 as well as col. 4, lines 25-34, and states that Dahlman suggests "searching an actual propagation delay value by using a search strategy based on said determined start propagation delay." Dahlman describes in those cited sections "a need [that] has arisen for a low-complexity, rapid cell-search procedure for asynchronous CDMA systems," (col. 2, lines 35-36). Further, in the cited sections of Dahlman is disclosed: "In particular, it would be advantageous to utilize as much a **priori search information** as possible to help reduce the level of complexity and increase the search rate for cell-searches and to enable simplified mobile positioning solutions," (col. 4, lines 22-26). The Applicant contends that in the sections cited by the Examiner Dahlman does not disclose or suggest "**searching an actual propagation delay value** by using a search strategy based on said determined start propagation delay," as claim 1 recites in part.

The Applicant contends that in claim 1 **a propagation delay** between the mobile station and the base station is actually **searched**, and this search is performed with a suitable start value. Clearly, Dalhman does not suggest as claim 1 recites in part "**searching an actual propagation delay value by using a search strategy based on said determined start propagation delay,**" where the start propagation delay value is determined based on a detected source radio network region of the mobile station and where the search is effected when the mobile station is about to enter a handover.

Furthermore, as cited by the Examiner Dahlman discloses "each BS (cell), with the assistance of the MSs connected to it, has **a known relative timing difference with respect to its neighbor BSs** (cells)," (col. 7, lines 22-24). Further, Dahlman states that the relative timing between the BSs may shift and thus the RTD estimates become uncertain. Therefore Dahlman discloses "**an RTD uncertainty estimate** can be broadcast or transmitted from the BS along with **the RTD estimate**, in the neighbor list message," and "The MS can then, for example, set (e.g., increase) its time-search window accordingly to allow for the additional level of uncertainty," and "The MS can thus cope with **those BSs having a relatively uncertain knowledge of its RTDs**," (col. 7, lines 37-43). The Applicant contends that the Examiner's statement equating that **varying the search window** somehow "discloses that a search is performed," is clearly improper. The Applicant contends that **in Dahlman a cell "search window" is adjusted based upon a broadcast RTD value**, where the **RTD value is a time difference between BSs, not a time difference between an MS and a BS as is a propagation delay**. This disclosure is not be seen to suggest "**searching an actual propagation delay value** by using a search strategy **based on said determined start propagation delay**," as in claim 1.

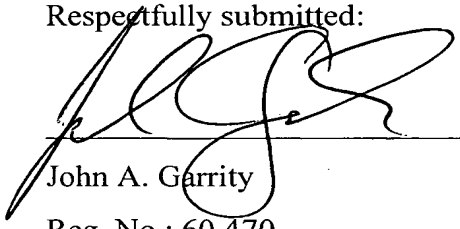
In addition, Papasakellariou provides a method for fast acquisition of the BS pilot, and the BS does not gather information on the delays where the handover took place. Clearly, the idea underlying Papasakellariou is not related to the present application. At the sections cited by the Examiner, Papasakellariou discloses "The method to search the uncertainty area, which is sometimes referred to herein as the "search area", can be based on any conventional approach, such as serial search, Z-search, and expanded window search," (col. 5, lines 31-34).

However, the Applicant contends that although a Z-search and expanding window search is mentioned in the cited reference, even applying Papasakellariou (which searches for spreading code offsets,) with the Applicant's admitted prior art in view of Dahlman, which **uses a known propagation delay** in order to estimate an RTD, which combination the Applicant does not agree is feasible or possible, still would not disclose or suggest "**searching an actual propagation delay value by using a search strategy based on said determined start propagation delay**," as recited in at least claim 1.

Clearly, for at least these reasons **claims 7 and 8 which depend from claim 1** are seen to be patentably distinct over the combination asserted by the Examiner.

Therefore, for at least the reasons stated, claims 1, 7, and 8 are seen to patentable over Dahlman alone or in combination with the asserted admitted prior art. Further, as independent claims 9 and 17 recite language similar to claim 1 for at least the reasons stated the references cited are not seen to disclose or suggest these claims. Moreover, as claims 2-6; claims 10-16; and claim 18 depend from claims 1, 9, and 17, respectively, the references cited are not seen to disclose or suggest these claims and the rejections should be removed for all the claims 1-18.

Respectfully submitted:



6/21/07

John A. Garrity
Reg. No.: 60,470
Customer No.: 29683
HARRINGTON & SMITH, PC
4 Research Drive
Shelton, CT 06484-6212
Telephone: (203)925-9400
email: jgarrity@hspatent.com

Date

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450.

6-21-07 Ann Okrentowich

Date Name of Person Making Deposit